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**I Blame Therefore it Was: Rape Myth Acceptance, Victim Blaming, and Memory
Reconstruction**

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Abstract

We examined the causal order of relationships between rape-myth acceptance (RMA), victim blaming and memory reconstruction. In Study 1, RMA-congruent memory (or alternatively, victim blaming) mediated the relationship between RMA and victim blaming (memory reconstruction). In Study 2, similar relationships emerged between RMA, victim blaming and memory reconstruction. Although no mediation of RMA occurred in Study 2 independently, a mini-meta-analysis of the Study 1 and 2 data replicated both patterns of mediation observed in Study 1. In Study 3, memory accuracy for neutral details of a rape scenario was unrelated to RMA. Manipulating memory to be more (vs. less) RMA-congruent had no effect on victim blaming (Study 4), although manipulating perceived victim blameworthiness (Studies 5 and 6) produced RMA-congruent memory reconstruction when the victim was more (vs. less) blameworthy. The results suggest that, via victim blaming, RMA motivates a memory reconstruction process that explains and justifies victim blaming after-the-fact.

KEYWORDS: Rape myths, memory reconstruction, victim blaming

I blame therefore it was: Rape Myth Acceptance, victim blaming and memory reconstruction

According to Lonsway and Fitzgerald (1994), rape myths are “attitudes and beliefs that are generally false but widely and persistently held, and that serve to deny and justify male sexual aggression against women” (p. 134). This definition highlights that, for those who believe them, rape myths serve a specific function in explaining and justifying sexual violence against women. Although rape myths vary across cultures and societies, they consistently involve blaming the victim, exonerating the perpetrator, expressing disbelief over claims of rape, and believing that only certain types of woman are raped (Bohner et al, 2009; Burt, 1980; Grubb & Turner, 2012, Lonsway & Fitzgerald, 1994). Such beliefs have real-world consequences, and may manifest in jury verdicts, public policy and interpersonal reactions toward victims (Edwards, Turchik, Dardis, Reynolds & Gidyez, 2011; Lonsway & Fitzgerald, 1994). Both laypersons and those working within the criminal justice system, for example, are prone to overestimate the prevalence of false rape allegations (Allison & Wrightsman, 1993).

An established consequence of rape myth acceptance (RMA; i.e., endorsement of rape myths) is the tendency to blame the victim, with studies consistently reporting a positive correlation between RMA and victim blaming (Abbey, McAuslan & Ross, 1998; Lambert & Raichle, 2000; Mason, Riger & Foley, 2004; Yamawaki, 2009). Further, rape myths include normative assumptions about the characteristics and behaviour of victims and perpetrators that affect blame in experimental settings (for reviews, see Grubb & Harrower, 2009; Grubb & Turner, 2012; Whatley, 1996). Research has shown, for example, that more blame is attributed to rape victims when they are intoxicated (e.g., Simms, Noel, & Maisto, 2007), resist an attack less (e.g., Krulewitz & Nash, 1979), have a closer relationship with the

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

perpetrator (e.g., Krahé, Temkin & Bienick, 2007), and wear revealing clothing (e.g., Cassidy & Hurrell, 1995). These blame-related assumptions are reflected in RMA measures, such as the Illinois Rape Myth Acceptance Scale (IRMAS; Payne, Lonsway & Fitzgerald, 1999), which includes questions such as “When women go to parties wearing ‘slutty’ clothes, they are asking for trouble”, “A rape probably doesn't happen if a woman doesn't have any bruises or marks” and “If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand”.

Although RMA entails a general tendency toward victim blaming, it is important to distinguish RMA from specific expressions of blame toward individual victims. Similarly to how prejudiced attitudes predict, but are distinct from, prejudiced behaviours toward individuals or groups (Crandall, Eshleman, & O'Brien, 2002), RMA is strongly related to, but distinct from, the blaming of individual victims. Rape victim blaming is linked to various individual (e.g., belief in a just world; Kleinke & Meyer, 1990) and situational (e.g., a victim's clothing; Cassidy & Hurrell, 1995) factors besides RMA, and the relation of RMA to victim blaming can vary according to contextual factors (e.g., prior relationship between victim and perpetrator; Krahé, Temkin & Bienick, 2007). Correspondingly, recent research, reviewed in the following section, has investigated the processes by which individual differences in RMA translate into blaming of specific victims (for a review, see Bohner et al., 2009).

Schematic effects of RMA

Echoing Lonsway and Fitzgerald's (1994) characterisation of rape myths as stereotype-like, researchers have suggested that RMA functions as a cognitive schema, which guides and organizes the processing of rape-related information (Bohner, 1998; Bohner et al., 2009; Eyssel & Bohner, 2011; Süßenbach, Eyssel & Bohner, 2013). Broadly speaking, this

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

perspective entails that RMA influences information processing in ways that serve to magnify details of rape situations consistent with rape myths, paralleling similar biases toward attitudinally-congruent information in other domains (Callan, Ferguson & Bindemann, 2013; Feather, 1969; Hart et al., 2009; Judd & Kulik, 1980; Read & Rosson, 1982; Roskos-Ewoldsen & Fazio, 1992). Further, insofar as schemata enable observers to make inferences that extend beyond the immediately available information (Bartlett, 1932; Bruner, 1957), RMA could lead observers to infer details about a rape that did not actually occur (Bohner et al., 2009).

A number of studies have demonstrated schema-like effects of RMA on blame judgments (Eyssel & Bohner, 2011; Krahé, Temkin & Bienick, 2007; Süssenbach, Eyssel, Rees & Bohner, 2015; Süssenbach, Eyssel & Bohner, 2013; Süssenbach, Bohner & Eyssel, 2012). For example, in a mock-jury situation, Krahé et al. (2007) found that RMA was positively associated with blame attributed to a victim, and that individuals higher on RMA blamed the victim to a greater degree when the victim had a more (vs. less) intimate relationship with the defendant prior to the assault. Similarly, Süssenbach et al. (2013) found that RMA was negatively associated with ratings of the defendant's guilt, and more strongly so when an ostensible crime-scene photo contained RMA-congruent (vs. neutral) cues (e.g., a wine bottle and glasses). Individuals higher in RMA also appear to focus more on information pertaining to, and on photos of, rape victims as opposed to perpetrators (Süssenbach, Eyssel, Rees & Bohner, 2015), and more rapidly attend to RMA-congruent (vs. incongruent) cues in a crime-scene photo (Süssenbach, Bohner & Eyssel, 2012).

Taken together, the extant findings highlight two complimentary mechanisms through which RMA serves to exacerbate victim blaming: First, high (compared to low) RMA

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

individuals appear to *more readily process* RMA-congruent information, presumably rendering such information more salient and available for use in subsequent judgments. Second, irrespective of any processing advantage for RMA-congruent information, high RMA individuals appear to *more readily use, or assign greater diagnostic weight to*, such information when determining judgments of blameworthiness. Together, these mechanisms may lead high RMA individuals to construe sexual assault situations in a way that accords relatively closely to rape myths, in turn facilitating greater blaming of the victim.

RMA, Victim Blaming, and Memory Reconstruction

Another potential mechanism related to RMA and victim blaming, which has not received empirical attention, involves high-RMA individuals retrospectively, and erroneously, inferring the presence of RMA-congruent behaviours or contextual cues not present in the original stimuli, or distorting existing memory to more closely align with rape myths. A large body of research shows that memory is susceptible to distortion in ways inconsistent with actual events (for a reviews, see Davis & Loftus, 2007; Hirt, McDonald & Markman, 1998; Roediger, 1996). This research shows that beliefs and expectancies (Bartlett, 1932; Ross, 1989; Ross & Conway, 1986), motivation (Callan, Kay, Davidenko, & Ellard, 2009; McDonald & Hirt, 1997; Sanitosio, Kunda, & Fong, 1990), stereotypes (Macrea, Milne & Bodenhausen, 1994; Snyder & Uranowitz, 1978) and post-event information (Loftus, 1975; Loftus & Palmer, 1974; Pickrell, Bernstein & Loftus, 2004) can influence memory via processes of selection, construction, and reconstruction.

Of particular relevance is evidence that, at the time of remembering, people draw upon prior beliefs, attitudes, and expectancies to reconstruct details that are missing from

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

memory, and infer what might have occurred (Conway & Ross, 1984; McFarland & Ross, 1987, 1989; Read & Rosson, 1982). Reconstruction can involve the replacement of original memory with generic information from schema, or the creation of new, schema-consistent memories that extend beyond the original information (Alba & Hasher, 1983; Bartlett, 1932; Loftus & Palmer, 1974). Read and Rosson (1982), for example, found that participants who read a story about a nuclear accident were more likely to recognize actual and false material from the passage that aligned with (versus contradicted) their pre-existing attitudes toward nuclear power.

Research also shows that goals and motivation, as well as beliefs, can affect memory reconstruction, such that memory is biased in support of reaching a *desired* conclusion about past events (Callan, Kay, Davidenko, & Ellard, 2009; McDonald & Hirt, 1997; Sanitosio, Kunda, & Fong, 1990). Callan et al. (2009), for example, found that a lottery prize was recalled as being lower when the winner was construed as a “bad” versus “good” person, consistent with a motivation to view the world as a just place where people get what they deserve (Lerner, 1980). Similarly, McDonald and Hirt (1997) found that participants recalled that another student’s grades were relatively higher when the student was construed as likeable as opposed to unlikeable.

Taken together, extant findings on memory reconstruction suggest two possible and subtly distinct causal pathways by which RMA, victim blaming, and memory reconstruction may be related, which for ease of reference are hereafter referred to as “therefore-blame” and “blame-therefore”. In the therefore-blame model, when asked to remember details of a sexual assault, individuals draw on their pre-existing, schematic beliefs about sexual assault to guide remembering and infer details they are unable to recall. Amongst high-RMA

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

individuals, this process could lead to RMA-congruent memory biases which, in turn, increase victim blaming. In this model, memory reconstruction is a mediator of the relationship between RMA and victim blaming.

Alternatively, insofar as RMA involves a generalised and automatic tendency toward victim blaming (e.g., Lonsway & Fitzgerald, 1994), the process may be slightly different, such that memory reconstruction is an outcome, rather than a precursor, of high-RMA individuals' tendency toward victim blaming. The blame-therefore model entails that RMA triggers an immediate, intuitive assignment of blame to a rape victim which, when asked to remember details of a sexual assault, promotes *motivated* memory reconstruction amongst high-RMA individuals that serves to validate and justify blaming after-the-fact. This model entails that victim blaming is a mediator of the relationship between RMA and memory reconstruction.

The distinction between therefore-blame and blame-therefore is subtle, but non-trivial. The therefore-blame model implies that victim blaming is a likely, but not inevitable outcome of RMA, insofar as intervening to reduce RMA-congruent memory reconstruction could reduce victim blaming. Also, in the therefore-blame model, victim blaming is a relatively passive consequence of using prior, schematic beliefs about rape to guide and shape remembering. Alternatively, the blame-therefore model entails that victim blaming is a more-or-less inevitable consequence of RMA, with memory reconstruction serving to retrospectively legitimize a predetermined, motivated attribution of blame to the victim. Given the absence of prior research on the relations between RMA, victim blaming, and memory reconstruction, there is little basis to assume *a priori* that one or the other model

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

better characterises the process involved. Rather, in the present work, we sought to compare the blame-therefore and therefore-blame models empirically.

The Present Research

We examined the relationships between RMA, victim blaming, and memory reconstruction across six studies. In Studies 1 and 2, we measured levels of RMA, exposed participants to a rape scenario, and measured victim blaming and the extent to which memory was reconstructed in accordance with rape myths. In Study 3, we measured memory accuracy for neutral details of a rape scenario to examine whether RMA is related to memory accuracy for details of a rape scenario in general. In Studies 4 to 6, we sought to directly test and triangulate upon the causal ordering of the relationship between victim blame and reconstructive memory by experimentally manipulating memory for RMA-congruent cues in a rape scenario (Study 4), or the perceived blameworthiness of the victim (Studies 5 and 6).

All measures, manipulations, and exclusions are fully reported across studies. Data and materials for this project are available at osf.io/gb58c.

Study 1

In Study 1, we sought to establish whether RMA is related to RMA-congruent memory reconstruction and victim blaming. Through measurement-of-mediation, we examined whether the relationships between RMA, victim blaming and memory reconstruction are better characterised by either the therefore-blame or blame-therefore model.

Method

Participants. We recruited 255 participants (43.5% female; $M_{\text{age}} = 36.89$ years old, $SD_{\text{age}} = 11.66$) through Amazon's Mechanical Turk for a survey concerning "Gender Relations and Victimization Contexts". The minimum required sample size was fixed ahead of data collection, but here and throughout the final sample size was not completely predetermined due to the vagaries of online recruitment (e.g., because of slight over-recruitment and removing participants due to duplicate IP addresses). We requested 260 participants through MTurk, expecting some exclusions. In Study 1, we over-recruited by 1 participant and removed 6 participants due to duplicate IP addresses (here and throughout, we retained the earliest response). Across studies, we aimed to achieve at least 80% statistical power to detect "small-to-medium" effect sizes ($r = .20$ or $d = 0.40$; two-tailed, $\alpha = .05$).

Materials and procedure. Participants first completed a 22-item version of the IRMAS ($\alpha = .94$). They rated their agreement with statements such as "If both people are drunk, it can't be rape" and "If a woman doesn't say no, she can't claim rape" (1 = *Strongly Disagree*; 5 = *Strongly Agree*). Higher scores on the IRMAS indicate greater endorsement of rape myths.

Participants then read a 'typical' date rape scenario (adapted from Abrams, Viki, Bohner & Masser, 2003), in which a female student alleged that a male student whom she met at a party had raped her. The scenario describes how, after returning to the man's apartment, the pair kissed and caressed until the accused man offered her a drink, after which she began to feel disorientated. The man then began to undress the victim in spite of her repeated protestations and then raped her. The scenario indicated that the victim filed a police report the next morning, although the man denied the allegation and stated that the sex was consensual.

After a filler task in which participants read an unrelated story about the health benefits of coffee, participants responded to six questions examining memory for various aspects of the scenario, specifically “How many alcoholic drinks did the female (male) student have that evening”, (1 = 0; 6 = 5 or more); “How many times did the female student say ‘no’ to the male student”, (1 = 0; 6 = 5 times or more); “Did the male student use force on the female student? If so, what level of force was used”, (1 = None; 6 = Extreme force); “If the male student used force, how ‘playful’ was the force reported as being”, (1 = None used or not at all; 6 = Extremely playful) and “How long did it take before the female student reported the incident to the police”, (1 = A few hours; 6 = A couple of weeks). The items concerning how many times the victim said no and the male student’s use of force were reverse-scored such that higher ratings were always more consistent with rape myths. The six memory items were standardised and summed (higher scores = greater memory congruency with rape myths).

Participants then responded to four items assessing victim blame ($\alpha = .96$), specifically, “I believe the young woman was responsible for what happened to her”; “I believe the young woman brought this situation on herself”; “I believe that what has happened to the young woman is her own fault” and “I believe that the young woman is to blame for what happened to her”, (1 = Strongly disagree; 7 = Strongly agree). Higher scores indicate greater victim blaming.

Results

Descriptive statistics and intercorrelations among the measures are displayed in Table 1.

Participants higher in RMA blamed the victim more and remembered details of the scenario as being more consistent with rape myths. Moreover, RMA-congruent memory and blame were positively correlated.

Table 1

Means and intercorrelations among the measures employed in Study 1

Measure	<i>M (SD)</i>	1	2
1. IRMAS	2.01 (0.71)	-	
2. Memory	0.00 (3.20)	.25* [.13, .36]	-
3. Victim Blame	2.10 (1.39)	.77* [.71, .82]	.30* [.17, .42]

Note. IRMAS = Illinois Rape Myth Acceptance Scale. 95% percentile bootstrapped confidence intervals (10,000 resamples) for the correlations are presented in brackets. Degrees of freedom for each correlation = 253. * $p < .001$.

Bootstrapped mediation analyses (10,000 resamples) indicated that RMA-congruent memory significantly mediated the relationship between RMA (i.e., IRMAS scores) and victim blame (see Figure 1, top panel). The reversed pattern of mediation was, however, also significant, such that victim blame positively mediated the relationship between RMA and RMA-congruent memory reconstruction (see Figure 1, bottom panel). Hence, participants higher in RMA reconstructed their memory of the scenario in line with their pre-existing beliefs about rape, although it was unclear whether memory reconstruction was a precipitator of higher victim blaming, as predicted by the therefore-blame model, or an outcome of higher victim blaming, as predicted by the blame-therefore model (or if their influences were mutual).

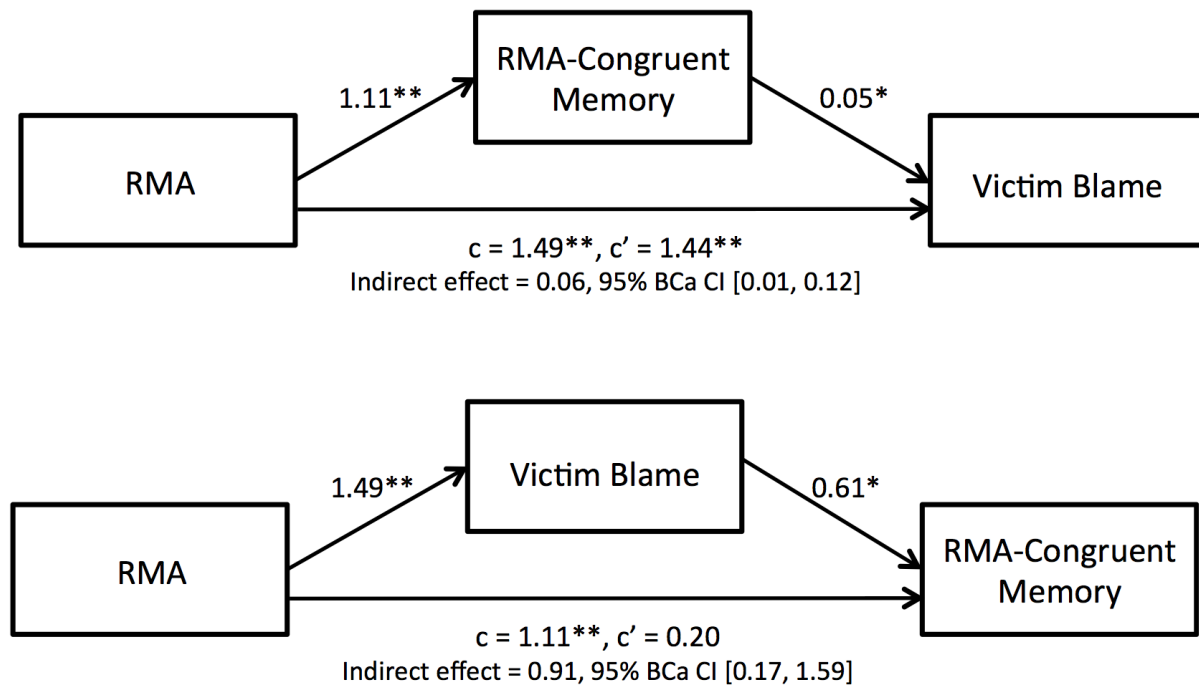


Figure 1. Path models of the indirect relationship of RMA on victim blame via RMA-congruent memory reconstruction (therefore-blame, top panel) and the indirect relationship of RMA on RMA-congruent memory reconstruction via victim blame (blame-therefore, bottom panel) for Study 1. BCa CI = Bias-corrected and accelerated bootstrapped confidence interval. Values represent unstandardized regression coefficients. RMA = Rape Myth Acceptance. * $p = .005$. ** $p < .001$.

Study 2

The purpose of Study 2 was to conceptually replicate the results of Study 1 using (a) a longer time delay between the acquaintance rape scenario and the memory items and (b) a different measure of RMA-congruent memory reconstruction. These changes were made for two reasons. First, including a delay enabled us to measure blame both prior to and after memory reconstruction, allowing for a more reliable test of therefore-blame and blame-therefore insofar as the corresponding mediation models could preserve the temporal order in which the variables were measured. Secondly, employing alternative measures, including a visual task, allowed us to examine whether the Study 1 results depended upon the particular method we used in Study 1 to measure memory reconstruction.

Method

Participants. Participants were recruited via Prolific Academic for a two-part survey concerning “Gender Relations and Victimization Contexts”. Of the 405 participants who completed Part 1, 200 were invited through Prolific Academic to complete Part 2 (based on their RMA scores; see below), and 176 (55% female; $M_{\text{age}} = 37.69$ years old, $SD_{\text{age}} = 13.23$) completed both parts (88% of those invited to Part 2). The survey for Part 2 was posted to the 200 potential participants midday on a Wednesday; we informed participants that the survey would deactivate at 17:00 on Friday (~48 hours later). An additional four participants were excluded due to duplicate IP addresses.

Materials and procedure. For Part 1, participants first completed the 22-item IRMAS ($\alpha = .92$) and read an acquaintance rape scenario similar to that employed in Study 1, with some minor modifications (e.g., the couple were said to have met at a “mutual friend’s house” as opposed to a party). Participants also examined an accompanying “crime scene photo” depicting a sofa, a table, and other neutral objects in a living room scene (see Figure 2). Finally, participants completed the four blame items ($\alpha = .95$) used in Study 1.



Figure 2. Photograph accompanying the acquaintance rape scenario in Study 2.

Five days later, an equal number of participants scoring highest (0.72 SD above the mean) and lowest (0.80 SD below the mean) on the IRMAS from Part 1 were invited to complete Part 2. We adopted this approach because, in addition to being cost-effective, it maximised differences in RMA and hence increased the likelihood of detecting relationships between the measures. Participants first undertook a sentence completion task in which the text of the rape scenario from Part 1 was repeated across a series of twelve partial sentences, each of which omitted text pertaining to some aspect of the scenario. They chose between two possible sentence completions to accurately match the original text. In actuality, the available choices never matched the original text, but consisted of one RMA-congruent and one RMA-incongruent choice. For example, the sentence “They made an instant connection and spent the majority of the night...” could be completed with either *“discussing politics and getting to know one another”* or *“flirting and drinking with one another”*.

Participants then saw a labelled visual array of 12 objects, six of which ostensibly appeared in the photo shown in Part 1 (the ordering of objects was fully randomised across participants). Participants’ task was to identify the six objects that appeared in the original photo (in reality, none of the objects did so). Six objects were intended to be consistent with rape-myths (an empty wine bottle, wine glasses, empty condom wrappers, a male-torso poster, lingerie, a retail bag from a lingerie/erotic toy shop) and each one was paired with a similar neutral/RMA-incongruent distractor item (coffee pot, coffee mugs, broken vase, Eiffel Tower poster, pyjamas, grocery bag).

The RMA-congruent choices were summed separately (coded 1 vs. 0) for the sentence completions and object selections. Sum scores from the two measures were standardised and summed to form a composite measure of RMA-congruent memory reconstruction. Finally, participants completed the same four blame items ($\alpha = .95$) answered in Part 1.

Results

Means and intercorrelations among the measures are shown in Table 2. Ratings of blame at Time 1 and Time 2 were highly correlated and did not significantly differ, $t(175) = 0.12$, $p = .91$, $d = .01$. Consistent with our Study 1 findings, participants higher in RMA blamed the victim more and remembered the scenario as being more congruent with rape myths. Victim blame (T1, T2, and averaged) and RMA-congruent memory were also significantly positively correlated.

Table 2

Means and intercorrelations among the measures employed in Study 2

Measure	<i>M (SD)</i>	1	2	3	4
1. IRMAS	1.92 (0.77)	-			
2. Memory	0.00 (1.58)	.25* [.11, .39]	-		
3. Victim Blame (T1)	2.03 (1.26)	.76* [.70, .81]	.26* [.13, .39]	-	
4. Victim Blame (T2)	2.04 (1.18)	.74* [.67, .80]	.24* [.11, .37]	.78* [.69, .85]	-
3. Victim Blame (M)	2.03 (1.15)	.79* [.74, .84]	.27* [.14, .39]	.95* [.93, .97]	.94* [.92, .96]

Note. IRMAS = Illinois Rape Myth Acceptance Scale. Victim Blame (M) = mean of T1 and T2 blame. 95% percentile bootstrapped confidence intervals (10,000 resamples) for the correlations are presented in brackets. Degrees of freedom for each correlation = 174. * $p < .001$.

Shown in Figure 3, bootstrapped mediation analyses revealed no significant indirect relationship between RMA and victim blame at Time 2 via RMA-congruent memory (top

panel), as predicted by the therefore-blame model. Similarly, there was no significant indirect relationship between RMA and memory via blame at Time 1, as predicted by the blame-therefore model.¹

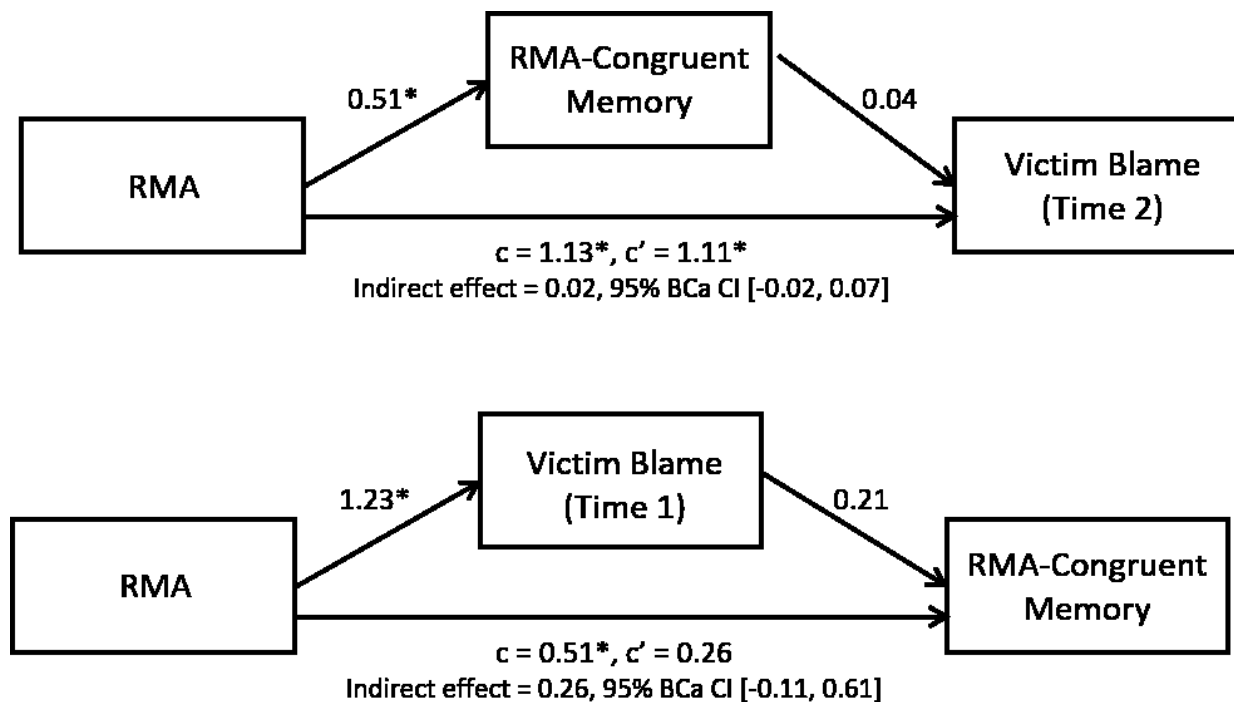


Figure 3. Path models of the indirect relationship of RMA on victim blame via RMA-congruent memory reconstruction (therefore-blame, top panel) and the indirect relationship of RMA on RMA-congruent memory reconstruction via victim blame (blame-therefore, bottom panel) for Study 2. BCa CI = Bias-corrected and accelerated bootstrapped confidence interval. Values represent unstandardized regression coefficients. RMA = Rape Myth Acceptance. * $p < .001$.

Although there was no statistically significant indirect relationship for either of the blame-therefore or therefore-blame models, the patterns we observed were similar to those found in Study 1 involving the same constructs. To better estimate the overall relationships, we performed an “internal meta-analysis” (e.g., see Goh, Hall, & Rosenthal, 2016) by collating the data across Studies 1 and 2 (standardised within study; total $N = 431$) and

¹ Nearly identical indirect relationships were obtained for the therefore-blame (indirect effect = 0.03, 95% BCa CI [-0.01, 0.07]) and blame-therefore (indirect effect = 0.28, 95% BCa CI [-0.13, 0.70]) models when we used the mean level of blame across time points as the mediator.

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

testing the blame-therefore and therefore-blame mediation models (using blame ratings at Time 1 for both studies). Overall, there was a significant correlation between RMA and memory reconstruction, $r = .248$, $p < .001$, which did not significantly differ between studies ($p = .97$). With the data combined across studies, bootstrapping analyses revealed significant indirect relationships between RMA and victim blame at Time 1 via memory (therefore-blame model), $b = 0.02$, 95% BCa CI [0.01, 0.05], and between RMA and memory via blame at Time 1 (blame-therefore model), indirect effect = 0.17, 95% BCa CI [0.06, 0.29].

Taken together, the results of our first two studies are the first to show that people higher in RMA tend to reconstruct details of a rape scenario in ways consistent with rape myths. These studies, however, were unable to elucidate whether memory reconstruction was precipitated by the tendency for people high in RMA to blame the rape victim (blame-therefore model) or whether RMA-congruent reconstruction of the rape scenario facilitated blame (therefore-blame model).

Study 3

Setting aside whether memory reconstruction is a mediator or outcome of the relationship between RMA and victim blaming (a problem we return to in Studies 4 to 6), both Studies 1 and 2 support the broader proposal that RMA is associated with memory reconstruction of details of an individual episode of rape. An alternative explanation of the findings, however, which does not fully depend on memory reconstruction *per se*, appears possible. Given that high and low RMA individuals attend differently to rape-related stimuli (e.g., Süssenbach, Bohner & Eyssel, 2012; Süssenbach, Eyssel, Rees & Bohner, 2015), our findings could reflect differences in how people initially process the scenario. Apparent memory biases may, for example, reflect *less* thorough processing of the scenario amongst

high RMA individuals. Although this would not preclude the operation of memory reconstruction at the time of remembering, it entails that ostensible memory biases may rely upon earlier differences in the processing of the stimuli.

Alternatively, if high RMA individuals process the scenario *more* thoroughly, details should presumably be recalled with relative ease and accuracy, and hence memory reconstruction would seem unlikely to occur. This possibility seems consistent with research showing that stimuli that are attitude-evoking or relevant to a person's interests are allocated greater attention and processed more extensively, than stimuli of lesser relevance (Petty & Cacioppo, 1979; Roskos-Ewoldson & Fazio, 1992). A positive relationship between RMA and memory accuracy would be difficult to reconcile with an interpretation of the findings in terms of memory reconstruction (e.g., high-RMA individuals could be consciously *reinterpreting* the scenario in line with RMA, rather than remembering it differently). Because we were unable to examine memory accuracy in Studies 1 and 2, in Study 3, we used a recognition test to investigate whether, and how, RMA was related to memory accuracy for neutral details of a rape scenario.

Method

Participants. A total of 313 participants (59% female; $M_{age} = 35$, $SD_{age} = 12.19$) were recruited online via Prolific Academic for a survey concerning "Gender Relations and Victimization Contexts". The minimum required sample size was fixed ahead of data collection. We requested 300 participants through Prolific Academic but over-recruited by 22 participants. We removed 9 participants for having duplicate IP addresses (retaining the earliest response).

Materials & Procedure. Participants completed the IRMAS, and read the date rape scenario and filler article about health benefits of coffee employed in Study 1. They next completed a 6-item, forced-choice recognition test for various neutral details of the scenario, specifically, “On what day of the week did the events take place” (*Monday, Tuesday, Wednesday*); “How long had the female student been at university” (*She had recently graduated, She was in her second-year, She was graduating later this year*); “Why did the male student invite the female student over?” (*For tea, For coffee, For food*); “What was the age of the female student” (*20, 21, 22*); “At what time of day was the male student questioned about the incident” (*In the morning, In the afternoon, In the evening*) and “Where did the male student live” (*In an apartment, In a house, In a university dorm room*).

Results

We calculated the number of recognition errors (i.e., incorrect responses) across the six items. Participants were relatively accurate, with most answering 1-2 items incorrectly ($M = 1.59$, $SD = 1.17$). There was no statistically significant association between RMA and the number of recognition errors, $r = .076$, 95% BCa CI [.212, -.068], $p = .18$. We next compared this correlation against the correlation we observed between RMA and memory reconstruction across Studies 1 and 2 ($r = .248$) (Diedenhofen & Musch, 2015). RMA was less strongly associated with recognition errors for neutral details of the scenario in Study 3 than it was with reconstruction of RMA-related details of the scenario in Studies 1 and 2, $Z = 2.35$, $p = .019$.

In sum, we found little evidence that memory accuracy for neutral details of a rape scenario varies as a function of RMA, and hence there was no support for the idea that apparent RMA-congruent memory reconstruction relates to differences in the initial

processing of the stimuli. RMA was more strongly associated with RMA-congruent memory reconstruction, specifically, than with more general inaccuracies in memory for the scenario.

Study 4

In Studies 1 and 2, we found evidence that people high in RMA are prone to reconstruct details of a rape scenario in ways consistent with rape myths, and that such RMA-congruent memory reconstruction is related to victim blaming. These studies, however, were unable to elucidate whether memory reconstruction was precipitated by the tendency for people high in RMA to blame the rape victim (therefore-blame) or whether RMA-congruent reconstruction of the rape scenario facilitated blame (blame-therefore). Although the reverse mediation testing we performed in Studies 1 and 2 suggests an overall stronger indirect relationship between RMA and memory reconstruction through blame (blame-therefore) than between RMA and blame through memory reconstruction (therefore-blame), testing of reverse mediation like this does not reliably discriminate between the adequacy of alternative models (see Lemmer & Gollwitzer, 2017). Accordingly, we next employed experimental designs to ascertain the causal effects of memory reconstruction on blame (Study 4) and blame on memory reconstruction (Studies 5 & 6).

In Study 4, we directly manipulated memory for RMA-congruent cues within a rape scenario and measured victim blame as an outcome, hence providing a causal test of the effect of RMA-congruent memory reconstruction on victim blame, as required by the therefore-blame model. This experimental-causal-chain design (Spencer, Zanna & Fong, 2005) allowed for a more direct test of the causal ordering of blame and memory than reverse-mediation testing (Lemmer & Gollwitzer, 2017).

Method

Participants. A total of 424 participants (52% female; $M_{\text{age}} = 36.20$ years old, $SD = 11.01$) were recruited through Amazon's Mechanical Turk for a survey concerning "Gender Relations and Victimization Contexts".² We requested a total of 431 participants through MTurk. We over-recruited by 7 participants and removed an additional 14 participants due to duplicate IP addresses ($n = 12$) or not answering the blame items ($n = 2$).

Materials and procedure. Participants first read the same scenario employed in Study 1, and examined a crime scene photo depicting a sofa, a table, and other neutral objects (see Figure 4).



Figure 4. Photograph accompanying the acquaintance rape scenario in Study 3.

² We initially tested 177 participants and found that there was no significant effect of leading questions on blame, $t(171.74) = -.42$, $p = .68$, $d = -0.06$. However, a sensitivity power analysis showed that with this sample size we had 80% power to only detect a "medium-large" effect size ($d = .42$; two-tailed, $\alpha = .05$). To reduce the likelihood of making a Type II error (i.e., suggesting no effect of memory reconstruction on blame when there is one), we collected data from an additional 247 participants to detect a potentially smaller effect size (a sensitivity power analysis showed that with $N = 424$ we had 80% power to detect a "small-to-medium" effect size, $d = .27$; two-tailed, $\alpha = 0.05$).

After a four-minute filler task involving arithmetic problems, participants answered either five non-leading or leading questions, which served as our memory manipulation (cf. Sharman & Powell, 2012). The leading questions implied the presence of RMA-congruent cues in the scenario or photo (e.g., a delay in the victim filing a police report; a wine bottle and glasses). The non-leading questions and response options were identical, except for the omission of the RMA-congruent cue, for example “How full was the bottle by the sofa” (non-leading) versus “How full was the *wine* bottle by the sofa” (*Empty; About a quarter full; About half full*). Five filler items were included in both conditions, such as “Approximately how old was the woman” (*Late teens; Early twenties; Late twenties*). The order of all 10 questions was fully randomised across participants.

On the following page, participants completed five *critical* binary-choice items that asked about the presence of RMA-congruent cues suggested by the leading questions, and which served as our measure of RMA-congruent memory reconstruction, for example “The bottle by the sofa was a...” (*Soft-drink bottle; Wine bottle*). Five *non-critical* items asked about details of the scenario or photo that were not subject to leading information, and served as a baseline measure of memory accuracy, such as “*The incident occurred...*” (*Early Saturday morning; Early Tuesday morning*). All 10 items afforded one correct (neutral) and one incorrect (RMA-congruent/neutral) response, and the order of items was fully randomised across participants. Finally, participants completed the four blame items ($\alpha = .96$) used previously.

Results

Accuracy scores (the proportion of correct answers) were calculated for the five critical and five non-critical items separately. Lower accuracy for critical items indicates RMA-congruent recognition errors.

For non-critical items (i.e., those not subject to leading information), accuracy was not significantly different when participants received leading ($M = .77$, $SD = .16$) or non-leading questions ($M = .76$, $SD = .16$), $t(420.26) = 0.404$, $p = .69$, $d = .04$, 95% CI of d [-0.25, 0.13] and was significantly above chance (i.e., .50), $t(423) = 34.04$, $p < .001$, $d = 1.65$. Hence, neutral details of the scenario or photo not subject to leading questions were recognised relatively accurately.

For critical items, accuracy was lower, and close to chance, when participants received leading ($M = .56$, $SD = .24$) compared to non-leading questions ($M = .73$, $SD = .22$), $t(418.22) = 7.97$, $p < .001$, $d = 0.77$, 95% CI of d [0.54, 0.93]. Hence the leading questions successfully led participants to incorrectly recognise that RMA-congruent cues were present in the scenario and photo.

Although the leading questions clearly led to RMA-congruent memory reconstruction, the manipulation had no significant effect on victim blame, which was the same whether participants received leading ($M = 2.27$, $SD = 1.39$) or non-leading questions ($M = 2.37$, $SD = 1.54$), $t(418.03) = -0.72$, $p = .47$, $d = -0.07$, 95% CI of d [-0.26, 0.12]. If anything, the observed pattern suggested a trend towards *less* blame following the leading (vs. non-leading) questions. In sum, Study 4 found little support for the therefore-blame model.

Study 5

Our Study 4 findings suggest that RMA-congruent memory reconstruction does not seem to precipitate victim blaming, insofar as successfully manipulating memory for a rape situation to align with rape myths (vs. not align) had no significant effect on victim blaming. In Study 5, we sought to experimentally test the blame-therefore model in which blaming a rape victim precipitates/is causally prior to RMA-congruent memory reconstruction, by

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

manipulating the apparent blameworthiness of the victim and measuring RMA-congruent memory. Specifically, we manipulated cues within a rape scenario that implied the victim was (or was not) in some way responsible for the incident (cf. Shaver, 1985), and in a manner that was independent of the details participants were asked to remember about the scenario. We also explored whether the effect of the blame manipulation on RMA-congruent memory reconstruction varied depending on individual differences in RMA.

Method

Participants. A total of 357 participants (51% female; $M_{age} = 33.37$ years old, $SD_{age} = 11.86$) were recruited via Prolific Academic for a survey concerning “Gender Relations and Victimization Contexts”. The minimum required sample size was fixed ahead of data collection. We requested 360 participants through Prolific Academic but over-recruited by 13 participants. We removed 16 additional participants for having duplicate IP addresses ($n = 4$) or incorrectly answering a scenario comprehension check ($n = 12$; described below).

Materials and procedure. Participants first completed the 22-item IRMAS ($\alpha = .93$), and then read an acquaintance rape scenario that was introduced as a “summary of a rape case that went before court last year”. The scenario was identical to that employed in Study 1, although the language was slightly modified to fit the context of a court case (e.g., the alleged perpetrator was referred to as “the defendant” and the account was described as the accusers “testimony”).

The scenario was immediately followed by a summary of the outcome of the case, which varied across conditions and served as our manipulation of perceived victim blameworthiness. In the low blameworthiness condition, participants were informed that “Forensic evidence and witness testimony corroborated the account of the incident that the woman gave to police. The defendant was found guilty and sentenced to 6 years in prison”.

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

In the high blameworthiness condition, participants were informed that, “the case was dismissed from court after the prosecution dropped the charges”. It was further stated that, “A message to a friend was found on the complainant’s phone that implied she had made misleading statements to the police. Material was also found on the complainant’s phone about her past sex life, including a recent three-in-a-bed incident.”

Participants next completed a filler task in which they read a story about the health benefits of coffee, and responded to the same six memory items employed in Study 1 (the six items were standardised and summed). Finally, participants completed an attention check that asked about the outcome of the case (one of four available responses was correct).

Results

Manipulation validation study. To ensure that our manipulation affects people’s perceptions of the victim’s blameworthiness as intended, we conducted a separate validation study with a sample of MTurkers ($N = 87$, 46% Female, $M_{age} = 33.75$, $SD_{age} = 10.81$) using this manipulation and the same 4 blame items we used in Study 1. Participants in the high-blame condition ($M = 3.21$, $SD = 2.08$) blamed the victim to a greater extent than did those in the low-blame condition ($M = 1.98$, $SD = 1.14$), $t(58.18) = 3.35$, $p = .001$, $d = 0.75$, 95% CI of d [0.31, 1.18].

Effects of Blame on RMA-congruent Memory. We regressed RMA-congruent memory scores onto IRMAS scores (standardized), low vs. high blame condition (weighted effect coded), and their cross-product interaction term. Consistent with our Studies 1 and 2 findings, the results revealed a significant positive association between RMA and RMA-congruent memory reconstruction, $B = 0.42$ [95% percentile bootstrap CI: 0.07, 0.78], $se = 0.17$, $\beta = .13$, $t(353) = 2.47$, $p = .014$. There was also a significant effect of the blame

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

manipulation on RMA-congruent memory, $B = 0.50$ [95% percentile bootstrap CI: 0.17, 0.82], $se = 0.17$, $\beta = .16$, $t(353) = 2.99$, $p = .003$, such that participants who read the high-blame scenario remembered the details of the scenario as being more RMA-congruent ($M = 0.47$, $SD = 3.39$) than did those who read the low-blame scenario ($M = -0.44$, $SD = 2.91$), $d = 0.29$, 95% CI of d [0.08, 0.50]. The RMA X Blame Condition interaction was not statistically significant, $B = 0.13$ [95% percentile bootstrap CI: -0.23, 0.49], $se = .17$, $\beta = .04$, $t(353) = 0.75$, $p = .45$.

In sum, Study 5 demonstrated that manipulating the perceived blameworthiness of the victim precipitated RMA-congruent memory reconstruction when the victim was more (vs. less) blameworthy, thus supporting the blame-therefore model.

Study 6

Although our Study 5 findings support a causal effect of victim blaming on RMA-congruent memory reconstruction, the blameworthiness manipulation involved a potential limitation which cautions against drawing a strong conclusion. Specifically, information about the complainant's behavior was confounded with the outcome of the trial. Whereas participants in the high blame condition were informed that the case was dismissed due to evidence that the woman had a promiscuous past, and had made misleading statements to police, those in the low blame condition were informed that evidence corroborated the woman's account, leading to a successful prosecution. Hence, although our validation study showed that the manipulation affected perceptions of blame in the manner expected, this may have been due to the differing trial outcome in either condition, as opposed to the woman being perceived as relatively more versus less blameworthy *per se*.

Hence, in Study 6, we sought to replicate our Study 5 findings using an improved manipulation of victim blameworthiness. We orthogonally manipulated several cues

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

reflective of items contained in the IRMAS and which, according to prior research, are related to rape victim blaming, including the prior relationship between the perpetrator and victim (e.g., Krahé, Temkin & Bienick, 2007), the victim's level of physical resistance (e.g., Krulewitz & Nash, 1979), and information suggestive of the desirability of the woman's character and motives (e.g., Burt, 1980). Importantly, we manipulated blame-related cues that were independent of the information participants were subsequently required to recall about the scenario.

Method

Participants. A total of 203 participants (65% female; $M_{age} = 35.62$ years old, $SD_{age} = 12.42$) were recruited via Prolific Academic for a survey concerning "Gender Relations and Victimization Contexts". The minimum required sample size was fixed ahead of data collection. We requested 200 participants through Prolific Academic but over-recruited by 13 participants. We removed 10 participants for incorrectly answering a scenario comprehension check (described below).

Materials and procedure. Participants read an acquaintance rape scenario broadly similar to that employed in Study 1, although certain details were modified to manipulate the perceived blameworthiness of the victim. In the high blameworthiness condition, participants were informed that the woman attended the party with her current boyfriend; that the alleged perpetrator was her ex-boyfriend; that she did not physically resist the man's advances; and that "given what they know about the woman, [others who attended the party] would not be surprised if she was fabricating the incident to hurt the accused". Conversely, in the low blameworthiness condition, participants were informed that the woman attended the party with friends; that she met the accused at the party; that she physically resisted the man's advances; and that "given what they know about the woman,

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

[others who attended the party] would be very surprised if she was fabricating the incident”.

Participants next completed the same 4 minute filler task employed in Study 4 (mental arithmetic problems), and six memory items. These items were identical to those employed in Study 1, with two exceptions. Specifically, two items which asked about the number of alcoholic drinks consumed by either the woman or the man (i.e., “How many alcoholic drinks did the female (male) student have that evening”) were amended to “How drunk was the woman (man) reported as being that evening” (1 = *Not at all drunk*; 6 = *Extremely drunk*). The memory items were standardised and summed. Finally, participants completed an attention check that asked how the man and woman met (one of four available responses was correct).

Results

Manipulation validation study. To ensure that our manipulation affects perceptions of the victim’s blameworthiness as intended, we conducted a separate validation study via Prolific Academic ($N = 69$, 55% Female, $M_{\text{age}} = 30.97$, $SD_{\text{age}} = 10.49$; 10 further participants were excluded for failing an attention check, and 1 due to a duplicate IP address) using this manipulation and the same 4 blame items used previously. Participants in the high-blame condition ($M = 2.76$, $SD = 1.26$) blamed the victim more than those in the low-blame condition ($M = 2.06$, $SD = 0.78$), $t(56.91) = 2.78$, $p = .007$, $d = 0.67$, 95% CI of d [0.18, 1.15].

Effects of Blame on RMA-congruent Memory. Consistent with our Study 5 findings, and the blame-therefore model, there was a significant effect of the blame manipulation on RMA-congruent memory, such that participants who read the high-blame scenario remembered the events as being more RMA-congruent ($M = 1.06$, $SD = 2.88$) than did those

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

who read the low-blame scenario ($M = -0.99$, $SD = 2.36$), $t(187.86) = 5.54$, $p < .001$, $d = 0.78$, 95% CI of d [0.49, 1.06].

General Discussion

That remembering can be distorted by pre-existing beliefs, attitudes, and motivations has been demonstrated in contexts including the recounting of folkloric tales (the “War of the Ghosts”; Bartlett, 1932), the recollection of politicised news stories (e.g., Read & Rosson, 1982), and memory for other persons’ pasts (Callan et al., 2009; McDonald & Hirt, 1997). The present research extends the phenomenon of memory reconstruction to the context of rape and responses toward rape victims. We found that RMA was consistently, and positively, associated with RMA-congruent memory reconstruction (Studies 1, 2 & 5). Memory for rape situations was distorted to more closely align with stereotyped beliefs about rape contained in RMA, and which apparently enable high-RMA individuals to hold victims blameworthy. Memory *accuracy*, as opposed to reconstruction, was weakly related to RMA (Study 3), and hence an interpretation of the findings in terms of differential processing of the stimuli amongst low and high RMA individuals was not supported. Rather, the findings suggest that RMA precipitates the reconstruction of memory for specific, RMA-related details of a rape scenario, and in accordance with a motivation to blame the victim.

We sought to elucidate the causal ordering of the relationships between RMA, RMA-congruent memory reconstruction and rape victim blaming, suggesting two models. The therefore-blame model entails that RMA distorts memory in accordance with rape myths, making a victim appear more blameworthy and consequently increasing victim blaming (i.e., reconstruction mediates between RMA and victim blaming). In the alternative, blame-

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

therefore model, insofar as RMA automatically motivates victim blaming regardless of memory biases, memory reconstruction acts to retrospectively explain and justify victim blaming (i.e., blame mediates between RMA and reconstruction). Our Study 1 findings were equivocal in regard to causal ordering insofar as significant indirect paths were obtained in both the therefore-blame and blame-therefore models. Although neither mediation model was significant in Study 2 alone, RMA, memory reconstruction and victim blame exhibited a similar, significant pattern of correlations as observed in Study 1. Further, significant indirect paths emerged for both the therefore-blame and blame-therefore models when the data from Studies 1 and 2 were analysed together. Although the correlational data supports the notion that memory reconstruction is related to RMA and rape victim blaming, it did not allow any inference about the particular role (i.e., therefore-blame or blame-therefore) it plays in this relationship.

Our experimental findings, however, support the blame-therefore model. Although successfully manipulating memory to be more (vs. less) consistent with RMA had no effect on victim blame (Study 4), manipulating the perceived blameworthiness of the victim (Studies 5 & 6) produced RMA-congruent memory reconstruction when the victim was perceived as more (vs. less) blameworthy.

Functions of 'Blaming Therefore'

The precise pattern of mediation, therefore-blame or blame-therefore, is non-trivial, for two reasons. First, our results imply that RMA-congruent memory reconstruction is a goal-oriented process, echoing similar findings on the role of motivation in memory reconstruction (Callan, Kay, Davidenko, & Ellard, 2009; McDonald & Hirt, 1997; Sanitosio, Kunda, & Fong, 1990). High-RMA individuals seemingly fabricate the 'evidence' to

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

retrospectively justify reaching a desired and pre-determined conclusion that a victim is blameworthy. This is in contrast to a relatively more passive, processing-based account in which RMA serves to guide remembering and is drawn upon to infer missing details (e.g., Alba & Hasher, 1983; Bartlett, 1932), *incidentally* making the victim appear more blameworthy in the eyes of high-RMA individuals. Secondly, our results imply that improving memory accuracy is unlikely to significantly reduce high-RMA individuals' tendency toward victim blaming.

Compared to therefore-blame, the blame-therefore model more closely echoes the notion that RMA is not simply an erroneous set of assumptions about what rape involves, but serves a particular, goal-directed function of rationalizing and legitimizing sexual violence by shifting blame away from perpetrators and onto victims (Brownmiller, 1975; Burt, 1991; Lonsway & Fitzgerald, 1994). Memory reconstruction presumably supports this function by allowing victim blaming to be explained and justified after-the-fact. Through the lens of RMA, recalling that a rape victim was intoxicated or behaved ambiguously may be construed as reasonable and sufficient grounds for holding them blameworthy. Consequently, memory reconstruction potentially enables high-RMA individuals to attribute their instinctive, automatic blaming reactions to a relatively 'rational' analysis of events, thus obscuring their motivation to blame rape victims regardless of the particular circumstances. Further, our results imply that RMA is a self-reinforcing belief system, insofar as the memory distortions it promotes serve to reconfirm and rationalize the prescriptive and descriptive beliefs about rape of which RMA is comprised.

Limitations and Future Directions

Our studies employed short scenarios presenting participants with the overarching details of rape situations, which were created for the purposes of our research. Although these scenarios are a good starting point, future work should explore how the processes we reveal unfold in relatively more 'real-world' contexts (e.g., jury-decision making), and how they are related to important behavioral outcomes. For example, future research could investigate how RMA-congruent memory reconstruction is related to assignment of guilt and punishment to alleged perpetrators, the reliability of eyewitness testimony, and other important processes and outcomes occurring in real-world legal contexts.

Our correlational studies examining the links between individual differences in rape myth acceptance, victim blaming, and memory reconstruction employed the IRMAS, a long-standing and well-regarded measure of RMA (e.g., Payne, Lonsway & Fitzgerald, 1999). As noted in the introduction, there is a degree of overlap between this measure of RMA generally, and victim blaming tendencies, specifically. It would be useful for future research to examine similar links between RMA, blame and rape-myth consistent memory using an RMA measure that does not explicitly incorporate victim blaming into its items.

With the exception of Studies 3 and 4, our memory measures did not allow for a factually correct response, and were, by design, somewhat leading. Hence, although we consistently found that individual differences in RMA, and experimental manipulations of victim blameworthiness, lead participants to recall details of rape situations in more RMA-consistent ways, our results do not allow for strong claims about the relative *accuracy* of memory. Relatedly, although Study 3 found no evidence that biased initial processing of the information *in general* accounts for RMA-congruent memory reconstruction, it remains possible that details directly relevant to RMA, as opposed to neutral details, are

differentially processed by individuals higher versus lower in RMA. Future research should further examine how, and under what conditions, the processes we reveal affect memory for factual details of rape situations, as well as the role of biased processing in producing RMA-congruent memory.

Study 4 successfully manipulated memory, but observed no effect on blame, and thus did not support the therefore-blame model. Potentially, some participants recognized questions as deliberately leading and reacted by blaming less, thus providing one possible explanation for the null effect on blame. That said, amongst participants who received leading questions, blame and accuracy on non-leading questions were unrelated ($r = .14$, $p = .19$). Participants with more accurate memory for the scenario in general should presumably be prone to spot misleading information, yet trended toward *higher* blaming, thus helping assuage concerns that reactance to leading questions attenuated blame.

Finally, all of our studies employed crowd-sourced, online samples. Despite the wide use of such samples for psychological research (e.g., via Mechanical Turk), it is important that future research attempts to engage with stakeholders more acutely connected to the issues we explored, such as law enforcement, legal professionals, jurors, and perhaps victims and perpetrators themselves.

Conclusion

As defined previously (Lonsway & Fitzgerald, 1994) rape myths are thought to facilitate the denial of, and the justification for, male sexual aggression against women. Our studies are the first to detail the broader processes involved in this form of gender-based prejudice vis-à-vis victim blame and memory reconstruction. The findings suggest more

RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

complex, even insidious, psychological processes may be at play when it comes to beliefs about rape. Specifically, we have shown that the denial and justification of male sexual aggression against women is reinforced downstream when individuals create, endorse, and perpetuate erroneous memories about the incident for the purpose of confirming their automatic, motivated tendency to blame the victim.

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RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

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RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

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RUNNING HEAD: Rape myth acceptance, victim blame and memory reconstruction

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